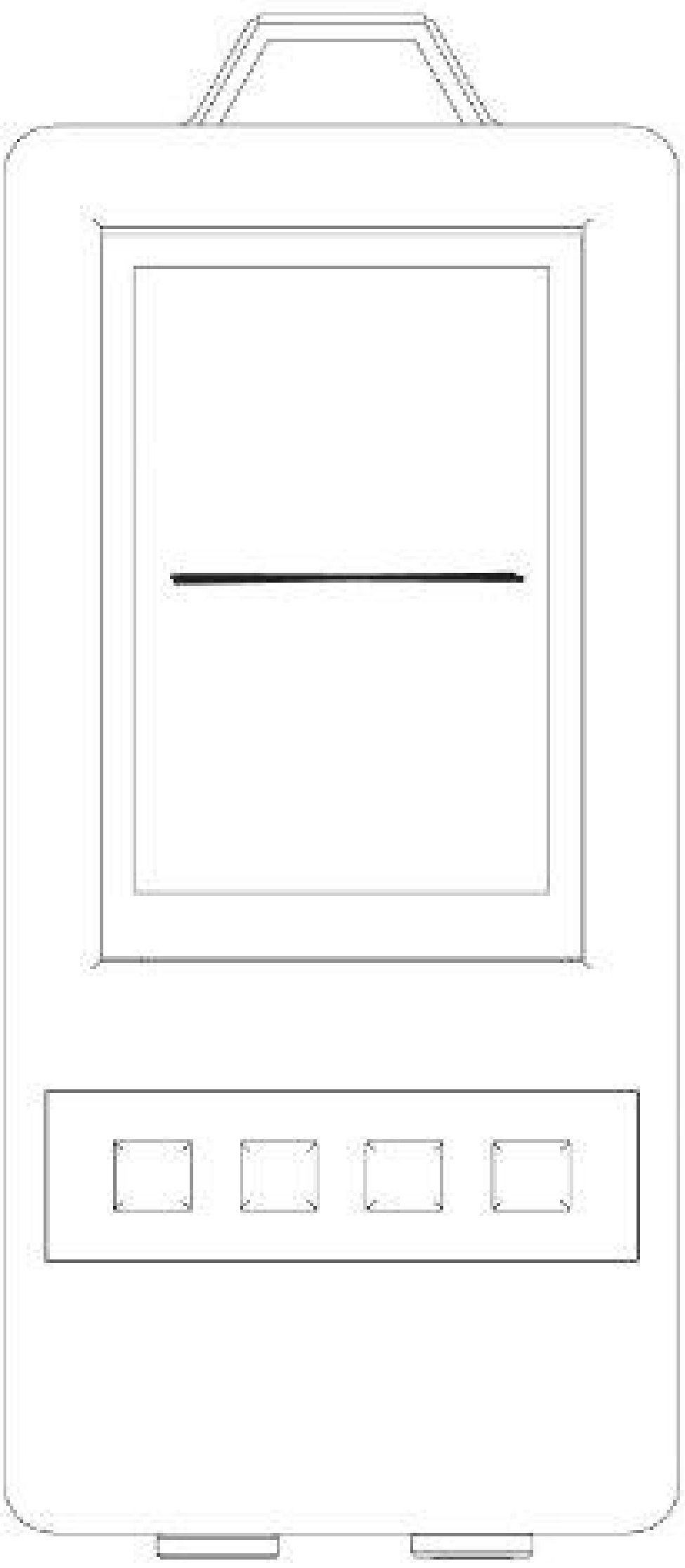


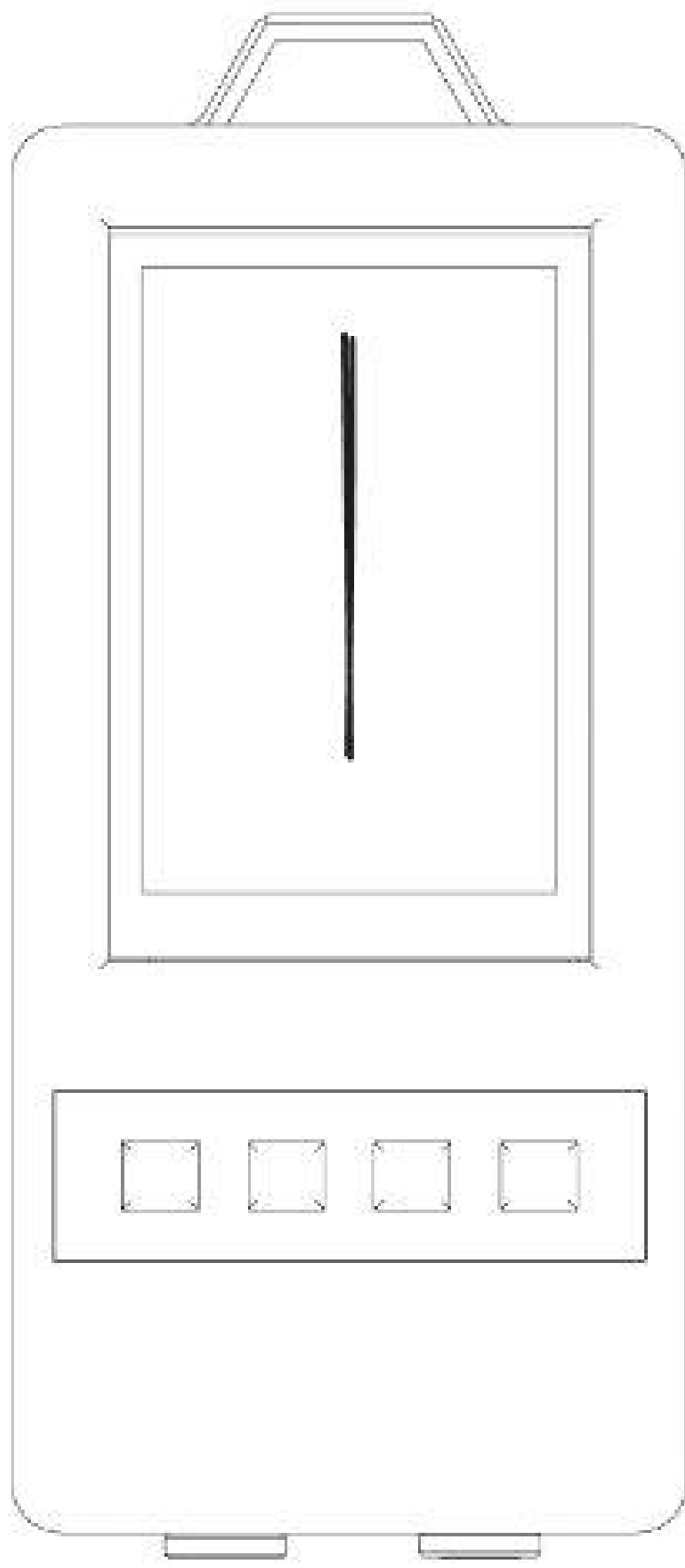
Connect the probes across the component under test and compare the live trace to the reference patterns below.

OPEN CIRCUIT ✓ HEALTHY



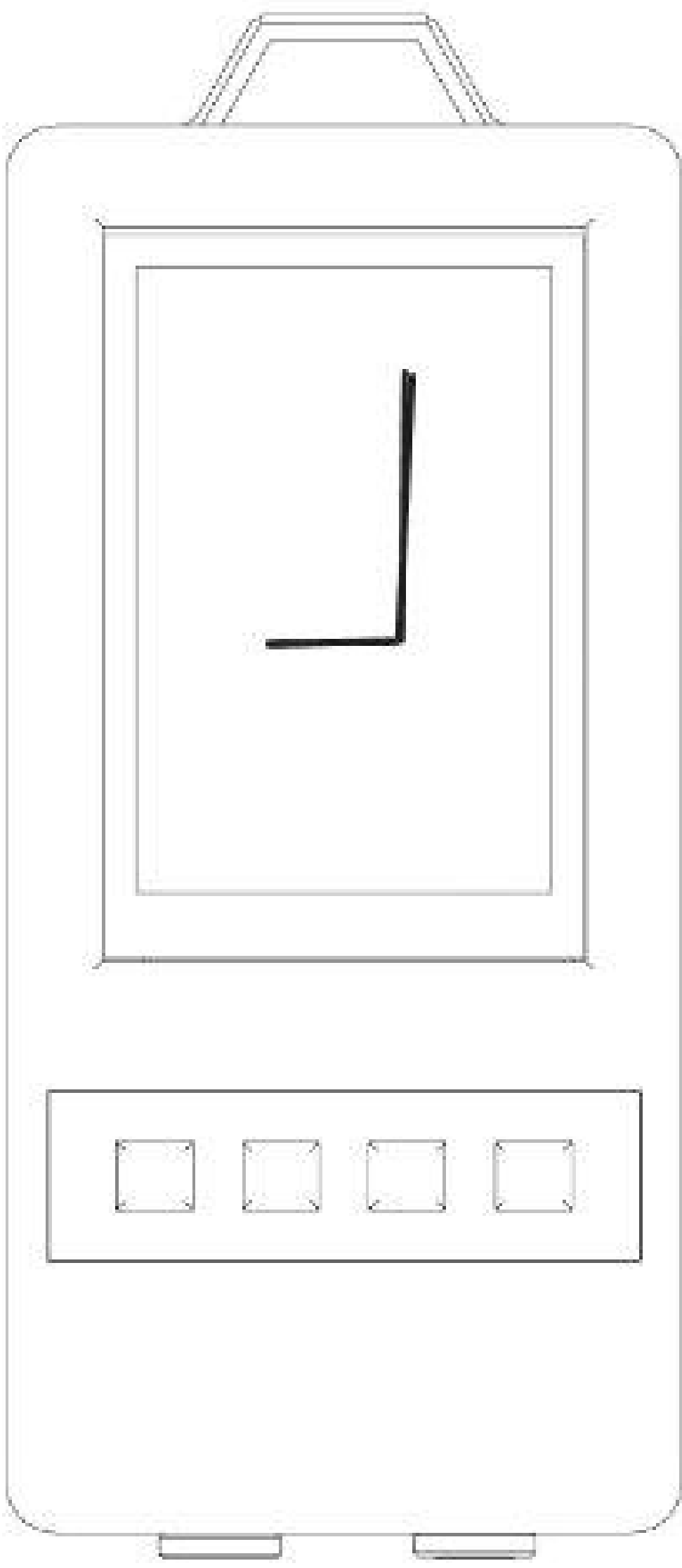
A horizontal line across the display. No connection between probes — zero current flows. Expected when probes are unconnected or testing across a genuine open circuit.

SHORT CIRCUIT ✓ HEALTHY



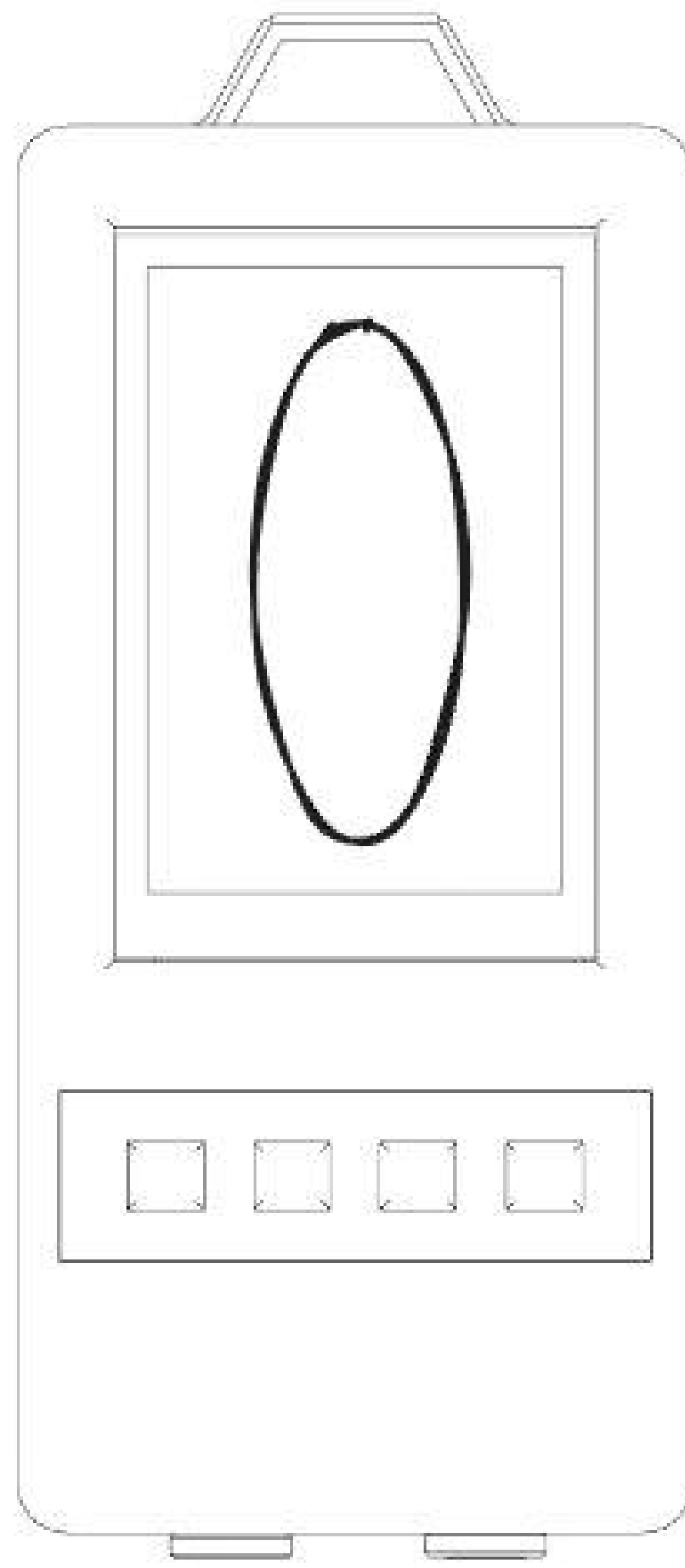
A vertical line on the display. Direct connection — zero impedance. Expected across a wire link. Seen unexpectedly, it indicates a short-circuit fault.

DIODE ✓ HEALTHY



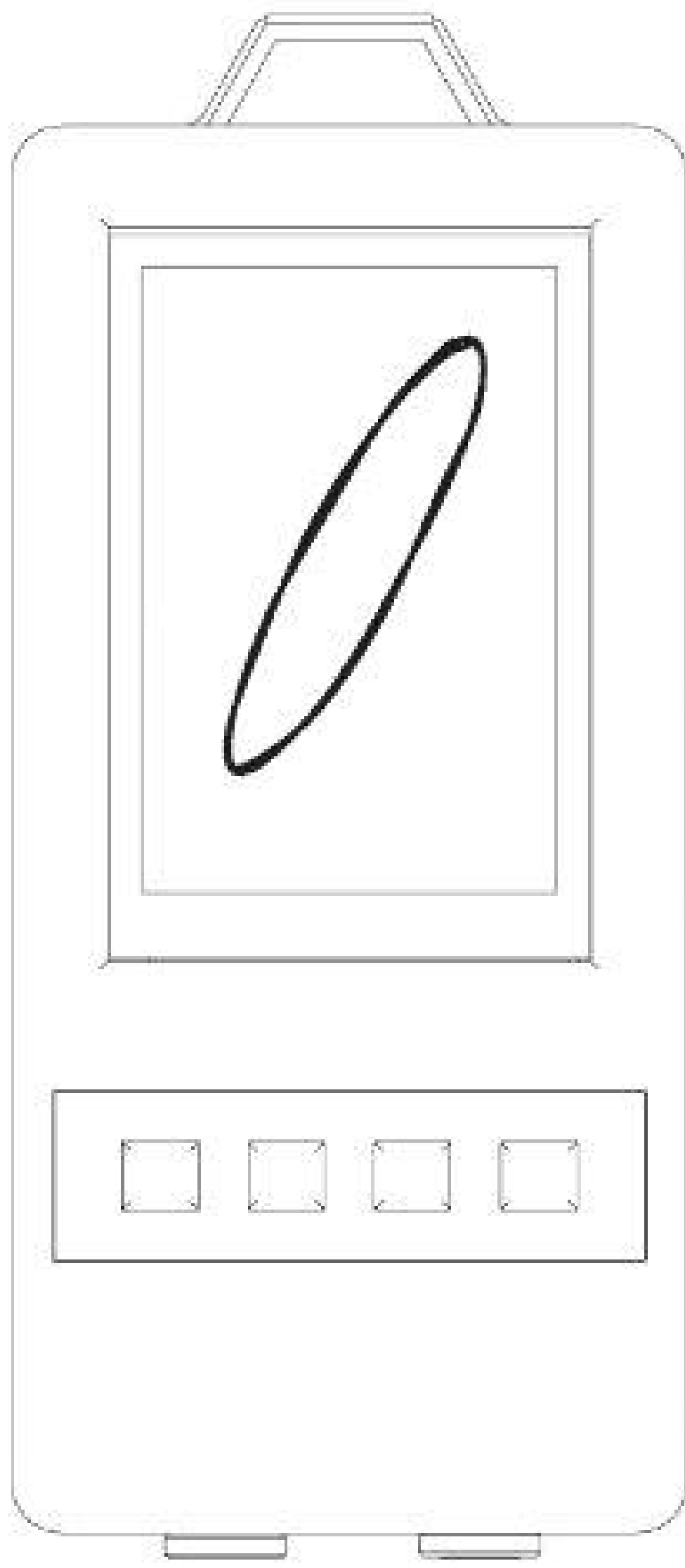
An asymmetric bent trace showing one-way conduction. A healthy diode shows a consistent, clearly asymmetric pattern. Reverse probes to confirm polarity.

CAPACITOR — HEALTHY ✓ HEALTHY



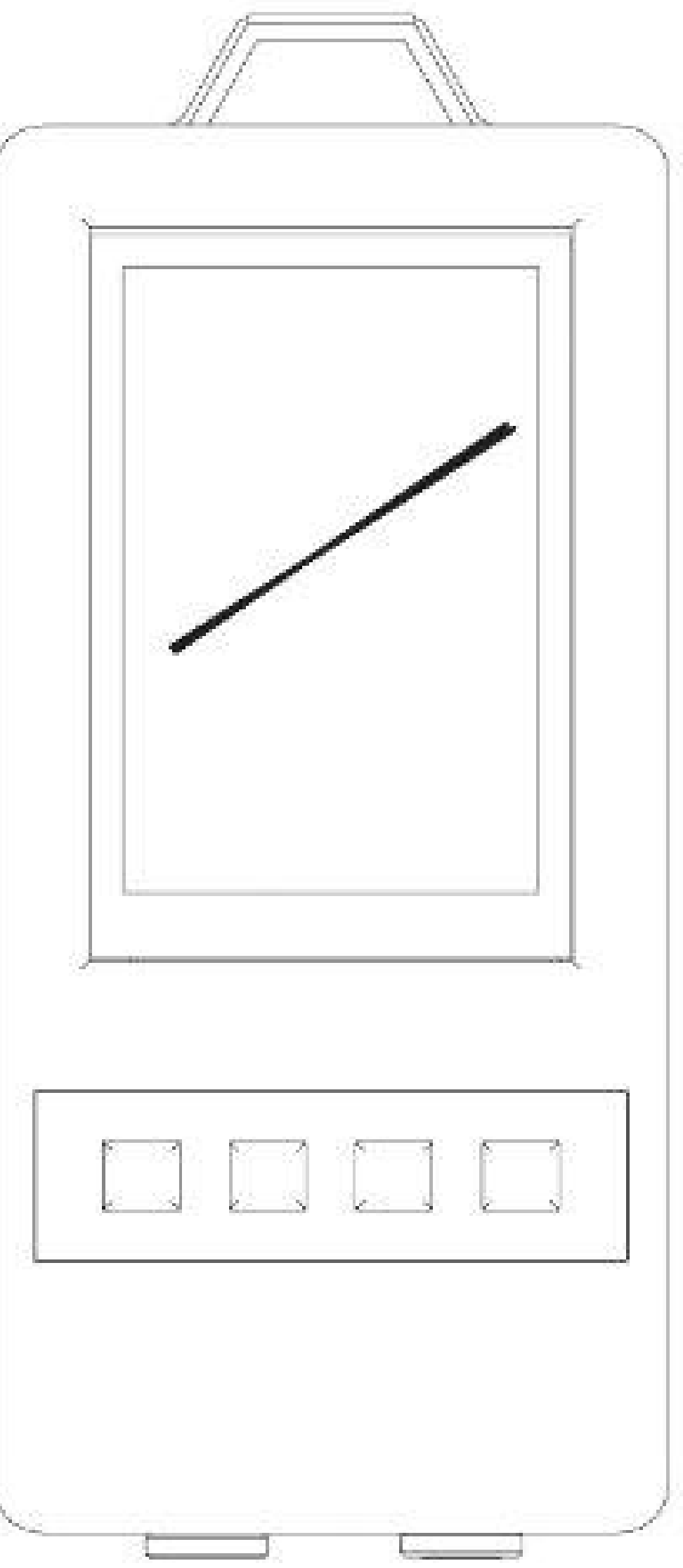
A symmetrical upright oval. The capacitor is charging and discharging evenly. The rounder and more symmetrical, the healthier. Larger oval = greater capacitance.

CAPACITOR — FAULTY (ESR) ▲ FAULT



A tilted or rotated oval. The capacitor has developed Equivalent Series Resistance (ESR). Greater tilt = more degraded. Replace the component.

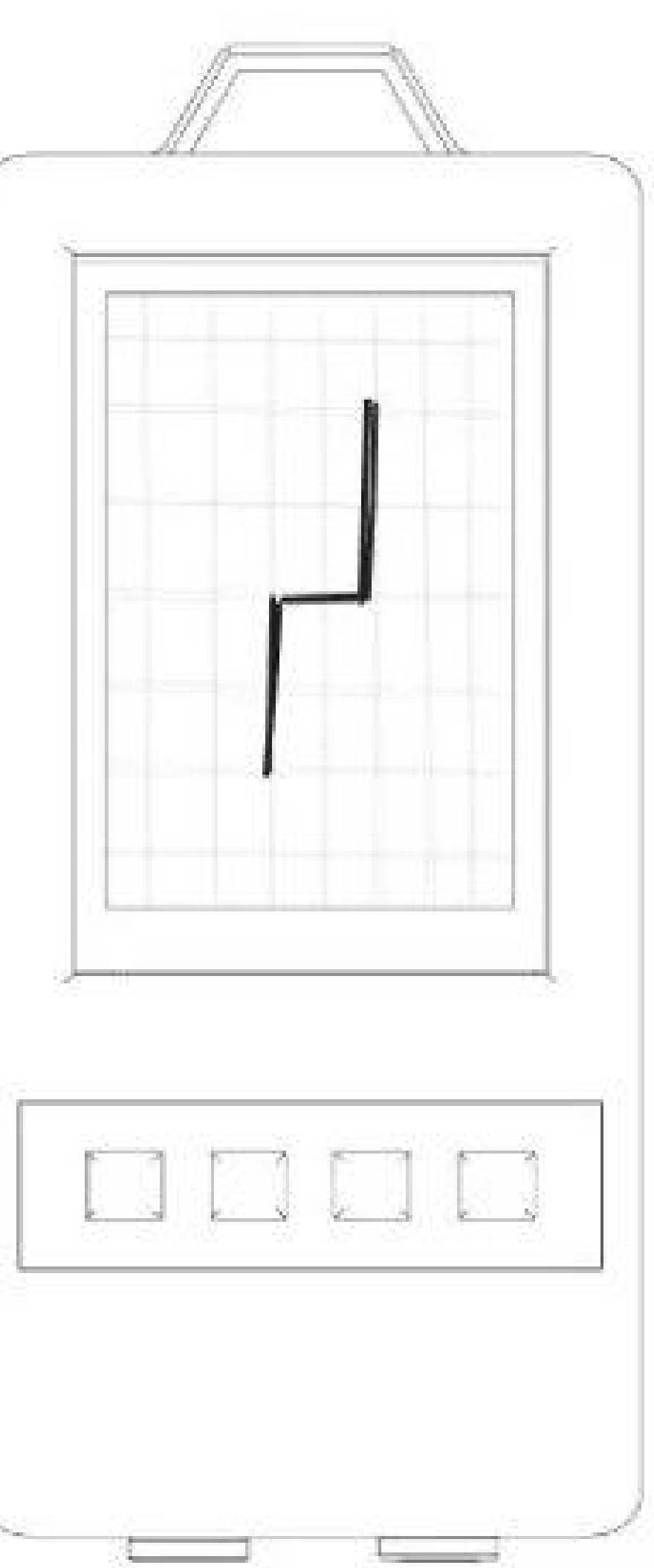
RESISTOR ✓ HEALTHY



A diagonal line. Steeper angle = lower resistance. Shallower = higher resistance. A clean straight diagonal confirms a healthy resistive component.

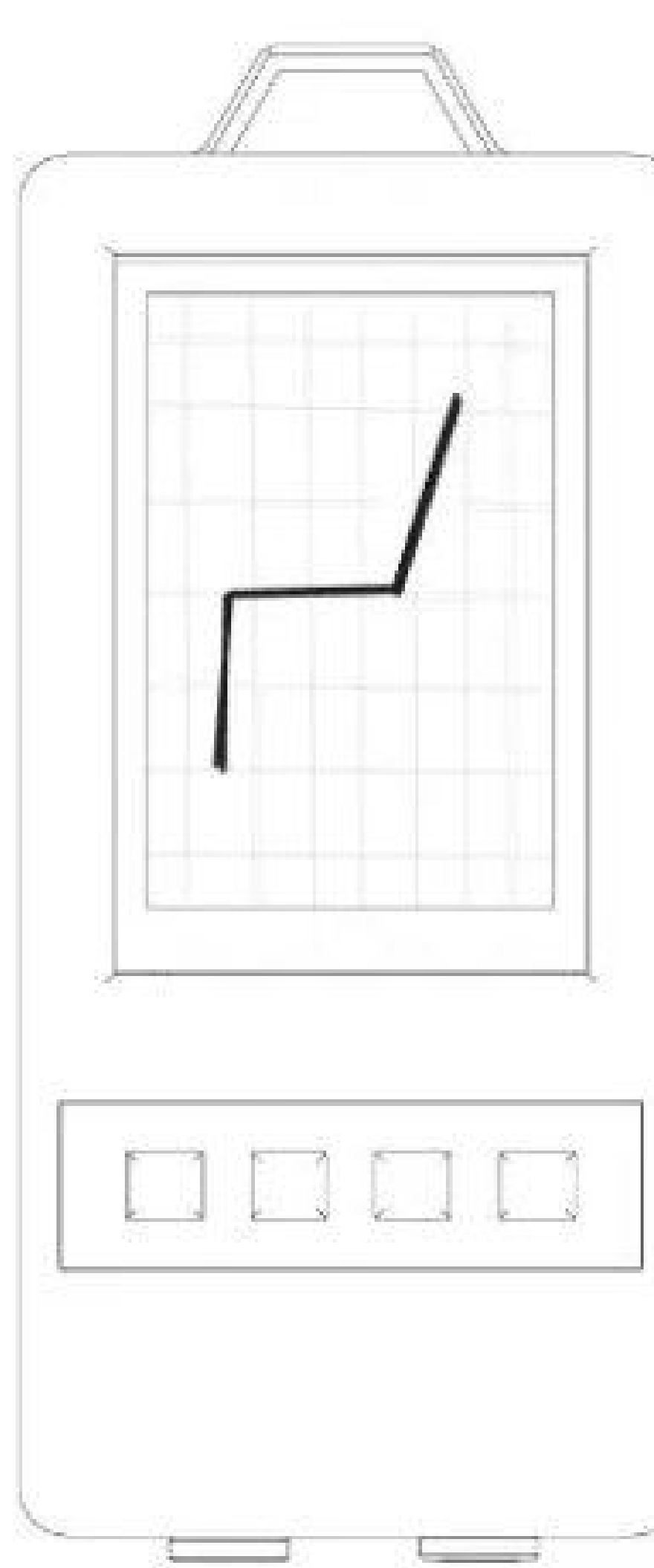
Always confirm de-energized state before connecting probes

EMITTER-BASE(A) ✓ HEALTHY



The Emitter–Base junction conducts forward current at a lower threshold. A clear asymmetric L- curve confirms the junction is intact and polarised correctly.

EMITTER-BASE(B) ✓ HEALTHY

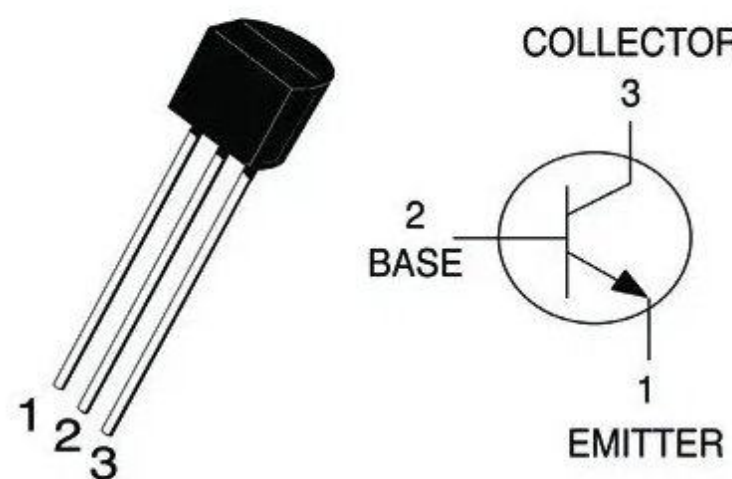


Alternate orientation of the Emitter–Base junction. Note the slight difference in curve angle compared to the Collector–Emitter — this is normal and expected for a good NPN transistor.

OCTOTESTER PRO — PRODUCT MANUAL

SECTION 06 — TRANSISTOR TRACES

PHYSICAL COMPONENT & SCHEMATIC SYMBOL



ⓘ TRANSISTOR TESTING — REFERENCE GUIDE

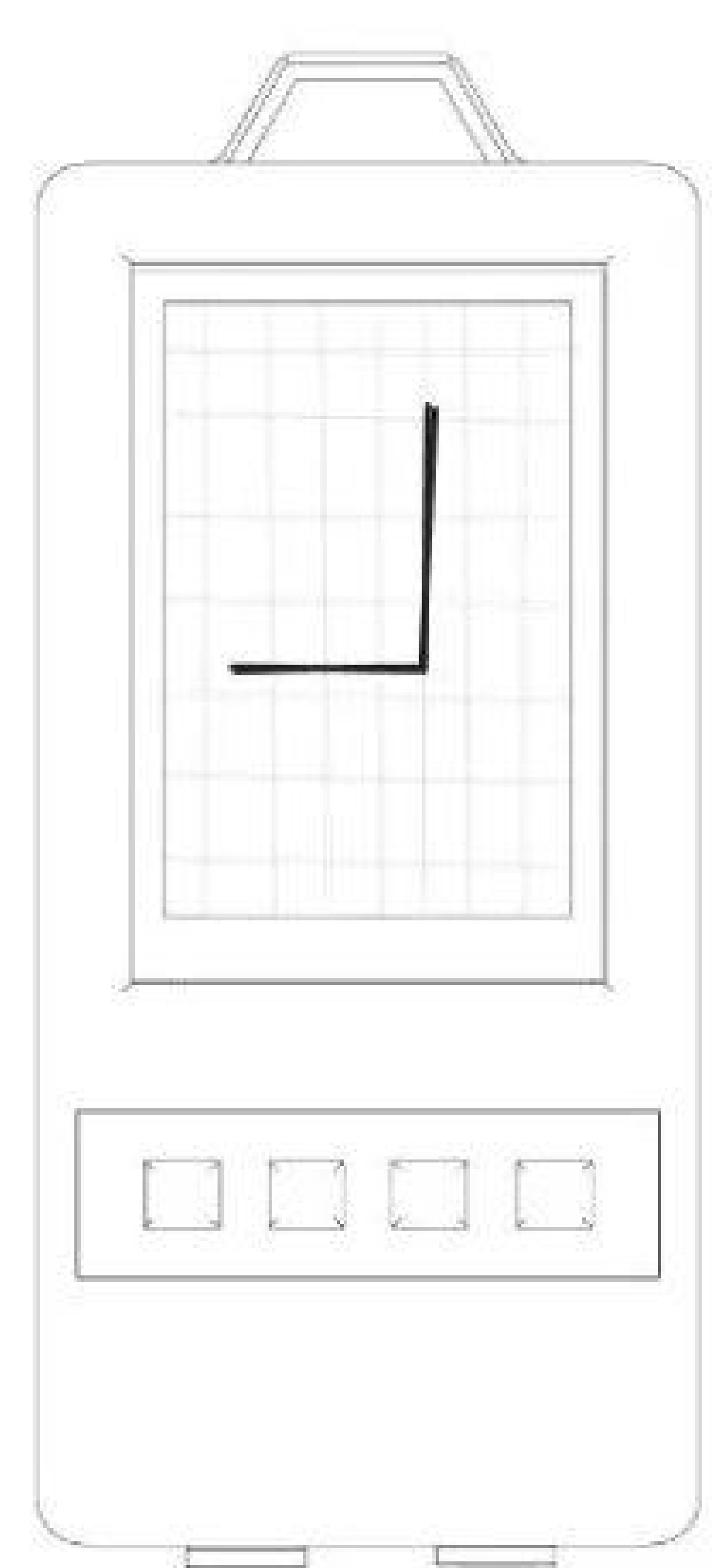
When testing a BJT transistor with the Octotester, place the probes across two of the three terminals at a time. A healthy transistor shows a characteristic diode-style asymmetric L-curve across the **Collector–Emitter** and **Emitter–Base** junctions. The **Collector–Base** junction also produces a similar diode curve. An open or flat line indicates a blown junction. A symmetric curve on all junctions may indicate a short.

The reference images below correspond to the NPN transistor diagram (pins 1 = Emitter, 2 = Base, 3 = Collector). For PNP types, the curve polarity is mirrored.

⚠ Always ensure the circuit is **fully de-energized and discharged** before connecting probes. Large capacitors may retain dangerous residual charge even after isolation. Verify with a rated voltage detector before contact.

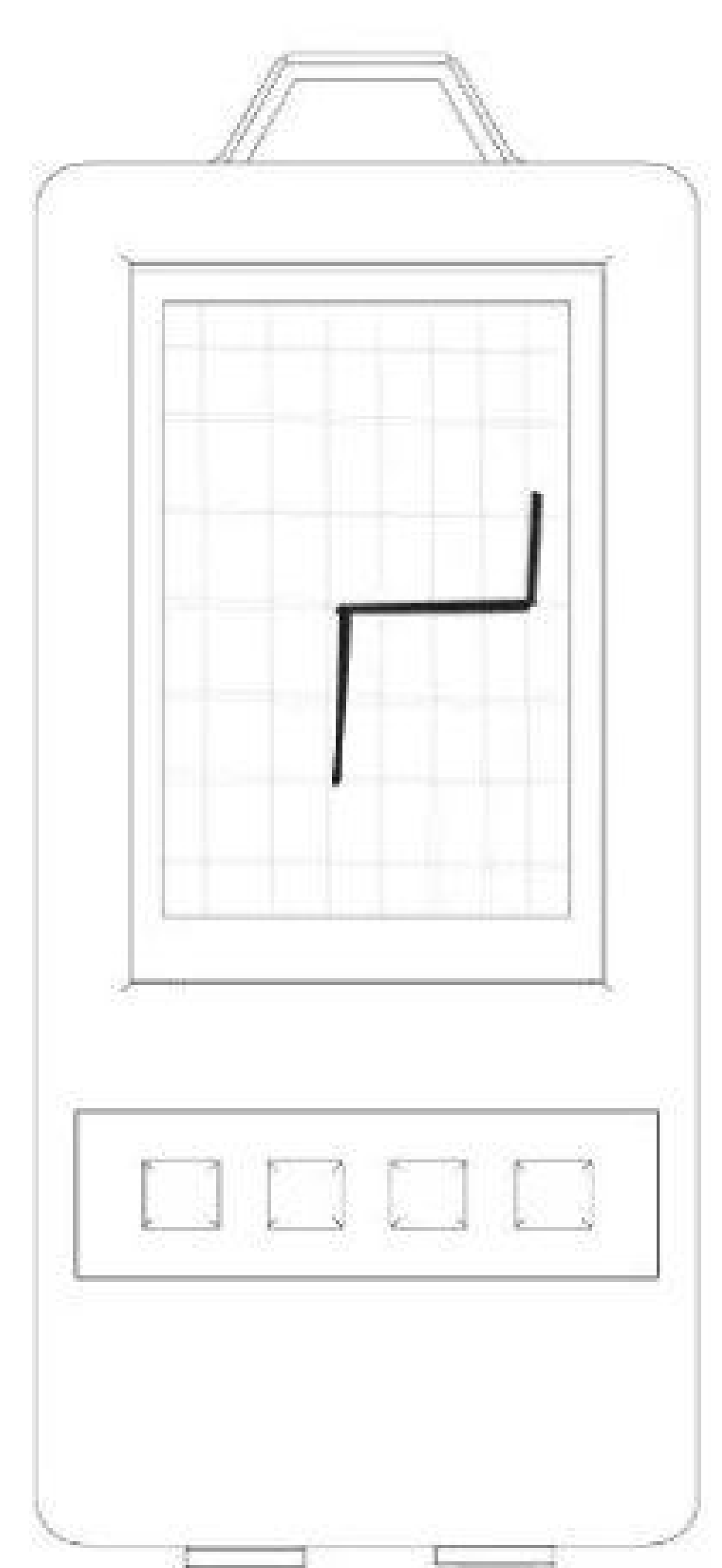
⚠ Always test with the circuit fully de-energized. All three junction pairs (C–E, E–B, C–B) should be tested and compared against a known-good reference transistor. Symmetrical or open traces on any junction indicate a fault. Replace and re-test.

COLLECTOR-EMITTER (A) ✓HEALTHY



Asymmetric bent L-curve showing one-way junction conduction. The sharp knee indicates a healthy forward-bias response. Consistent with a good NPN transistor junction.

COLLECTOR-EMITTER (B) ✓HEALTHY



Alternative view of the Collector–Emitter junction showing the asymmetric trace at a different probe orientation. Both polarities should show one conducting and one non-conducting half.